

**Report of the
Board of Regents**

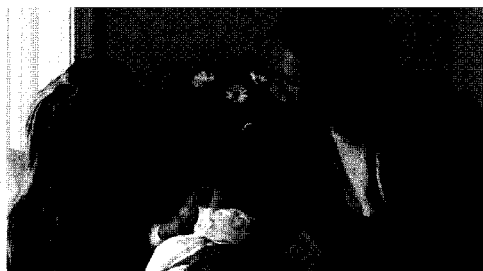
**National Library of Medicine
Long Range Plan**

A Global Vision for the National Library of Medicine



**U.S. Department of Health and Human Services
Public Health Service
National Institutes of Health**

September 1998



FOREWORD

Today, we are at the doorway of a new era for humanity; a new millennium stretches before us. The nation's investment in scientific research has created a revolution in the biological, medical, and material sciences unique in human history. Information and computer technology holds the promise of bringing new knowledge to billions of people across our globe in ways undreamed of even a short time ago. We now have the opportunity to provide timely and reliable access to health information resources that meet the highest standards of quality. This has always been the underlying goal of the National Library of Medicine. The recommendations of the Long Range Planning Panel on International Programs chart a most challenging course of action for the Library, one of leadership that is founded on partnership with the world's nations and peoples.



On this day, the Board of Regents of the National Library of Medicine unanimously and enthusiastically approves for incorporation in the NLM Long Range Plan the report of its Planning Panel on International Programs.

Michael E. DeBakey, M.D.
Chair, NLM Board of Regents
Chancellor Emeritus
Olga Keith Wiess and
Distinguished Service Professor of Surgery
Director, DeBakey Heart Center
Baylor College of Medicine
Bethesda, Maryland
January 27, 1998





THE WORK OF THE PLANNING PANEL

The National Library of Medicine is in the path of a whirlwind of changes. Many of these are forecasted in the vision of biomedicine in the coming millennium elsewhere in the pages of this report. As the largest medical library in the world, NLM's collection of more than 5 million items - books, journals, technical reports, manuscripts, microfilms, and pictorial materials- are an invaluable source of literature covering all aspects of health from the basic sciences to healing and prevention of innumerable afflictions suffered by human beings. In addition NLM houses special databases of information from which knowledge is constantly being generated, for example in worldwide collaborations assembling the structure of biological molecules. Presently, the most important of these involves the structure of the human genome.

NLM has been a pioneer in the creation and stewardship of computer-driven systems allowing users all over the world ready access to these databases and means to keep abreast of a very large number of papers and other reports from the world's community of health sciences. Its major communication medium is becoming the Internet, with tools not only to search the literature and databases, but also to link to an ever-expanding variety of sources, including electronic versions of complete journals. NLM's expertise in high performance computer technology is constantly adapting to an essential role in the global network which will be the nature of scientific exploration in the next hundred years. A greater flow of information will more strongly link medicine and the sciences, not only biomedical and behavioral, but other physical, chemical and social disciplines in the quest for better understanding of human beings and their relationships to the other forms of life sharing the planet Earth.

America has contributed generously to the advances in science and medicine in this century. The world's scientific and medical institutions must attempt to be prepared for the greater challenges and opportunities of the coming millennium. For this reason, the Board of Regents of the National Library of Medicine has asked the Director to empower a panel to develop a Long Range Plan for the international activities of the NLM. In doing so, the Director chose four questions to provide contours along which the plan should be developed. Stated below is my view of the answers the Planning Panel gave to these questions.

The first question was: *Does NLM have an international program?* When the Congress created NLM in 1956, the charge provided in the National Library of Medicine Act



read, in part, "to assist the advancement of the medical and related sciences, and to aid in the dissemination and exchange of scientific and other information important to the progress of medicine and the public health." Quickly capitalizing on the example of its predecessor, the Library of the Surgeon General of the Army, which had made the *Index Medicus*, the first compilation of the world's medical literature, the NLM provided the first computerized access to the Index Medicus. The Library then provided its computerized database to numerous international centers in exchange for abstracts of foreign literature and assistance in translation. Mainly because of the worldwide nature of medicine and its related sciences, the Library has thus beneficially supplied its users the essential international connections from the beginning. These international relationships

have been of steadily growing significance to both American and world medicine. Indeed, the increasing globalization of knowledge has made it clear that the domestic and international functions of the NLM are not separable.

Its second question was: *With what countries should NLM seek more relationships?* The recent enhanced accessibility of MEDLINE directly from NLM via the Internet presses the NLM to re-examine these older relationships. A broader reach is needed, however. In making new partnerships, the NLM will have great opportunity, but must match its comparative advantages with the needs of particular countries or regions, requiring NLM to be cognizant of the enormous diversity of this world, in terms of culture, language, health practices, technologies and economies. As expansion of international programming is necessary for NLM, so must the Library be aware that there is no single philosophy, product, or pricing that is likely to meet the needs of every country or region.

What kind of information should be of interest to NLM?

There is no question that databases developing from cooperative international research, such as the sequencing of genes, and the extension from structure to function, have a high priority. The conversion of in-

"TO ASSIST THE ADVANCEMENT OF THE MEDICAL AND RELATED SCIENCES, AND TO AID IN THE DISSEMINATION AND EXCHANGE OF SCIENTIFIC AND OTHER INFORMATION IMPORTANT TO THE PROGRESS OF MEDICINE AND THE PUBLIC HEALTH."

formation to new knowledge is one of the functions in which the great libraries can play an indispensable role. The need for access to the reports of medical and scientific study, however, continues to be paramount for a larger audience. Quality and peer review of such reports are matters on which the users place a high premium. At the same time, there will be regions of the world or





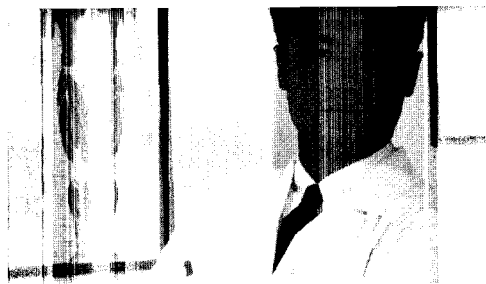
other cultures or other international databases to which linkages can have considerable value. Means to link such reports and sustain a world-view has been one of the challenges to the panel.

What new technology must NLM be prepared to use or improve in the fulfillment of its mandate? The Panel was thoroughly briefed on the uses and growth of electronic publishing, the progress of the next generation of the Internet, digitization of data, the use of satellites to reach remote areas and the guesses of what likely new technological inventions will arrive to test the Library's ability to cope. The panel concluded that pressures to

diminish the role of the printed page will continue and that no one can predict what changes in information technology-given its estimated year-and-a-half turnover time-will bring. For the present, the panel concluded that the NLM should assume that the Internet will continue to dominate until its replacement arrives.

The panel is grateful to the Director and the staff of NLM for providing an exciting tour of the future of scholarly communication.

Donald S. Fredrickson, M.D.
Chair, NLM Planning Panel on International Programs



The NLM Long Range Planning Panel on International Programs was chartered by the NLM Board of Regents in May 1995 for the purpose of advising NLM on the relative priority of its international activities and responsibilities, and to assist in the development of appropriate strategies consistent with the Library's statutory mission and availability of resources. The Panel was chaired by Dr. Donald S. Fredrickson; it consisted of 25 distinguished members assisted by expert consultants in the fields of medicine, telecommunications, health sciences librarianship, electronic publishing, and related fields. It met three times in 1996-7. The panel was asked to make formal recommendations to the Board on the future of NLM's international activities. The panel's recommendations reflect three overriding goals:

EXECUTIVE SUMMARY



OBJECTIVE ONE:

STRENGTHEN AND EXPAND GLOBAL ACCESS TO THE WORLD'S HEALTH-RELATED LITERATURE

1.1 NLM must expand its international partnerships with additional countries and regions that desire to benefit from improved access to electronic information resources and that seek collaborative ties with NLM, biomedical research and the medical library community. At the same time NLM must review, preferably by on-site visitation, its cooperative relationships with the present International MEDLARS Centers whose functions have been altered by the recent changes in access to MEDLINE.

OBJECTIVE TWO: CHART NEW ROUTES TO BIOMEDICAL KNOWLEDGE AND ITS USE

2.1 NLM should foster collaborative development of molecular biology information resources, such as the present GenBank, essential to the generation of new knowledge on the human genome. At the same time, the NLM must champion the open and unfettered exchange of this kind of information as essential to the health of this vital science.

2.2 NLM should actively offer its informatics expertise as a partner in research enterprises which will flourish as a result of increased communication among scientists and optimal connectivity to global information resources.



NLM serves researchers, health care professionals and patients around the world through the provision of up-to-date medical information. Representative pictures of people and places from many countries are interspersed throughout this report.

OBJECTIVE THREE: ENABLE NLM TO FULFILL ITS INTERNATIONAL MISSION

3.1 In concert with publishers, professional societies, major libraries, and international organizations, NLM should play a leadership role in the establishment of bibliographic and long-term preservation requirements and standards for electronic publications in medicine.

3.2 There being a need for well trained international workers skilled in medical informatics and the latest global information resources, NLM should actively partner with governmental and academic institutions to develop and offer such training opportunities to U.S. and foreign students.

3.3 NLM should be a prominent voice in policy debates on issues vital to the international exchange of scientific and medical information.

3.4 Additional financial resources are essential to fulfill these recommendations and to encourage the collaboration of others in their implementation.

"WITHOUT HEALTH, THERE CAN BE NO HAPPINESS. AN ATTENTION TO HEALTH, THEREFORE, SHOULD COME BEFORE ALL OTHER OBJECTS."

THOMAS JEFFERSON

RECOMMENDATIONS OF THE PANEL

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IMPLEMENTATION STEPS

In particular, funding is needed to support the following high priority initiatives:

- Enhancement of the resources of the National Center for Biotechnology Information to assure that it will continue to compete effectively and to collaborate on an equal footing with its international counterparts in Europe and Asia;
- New collaborative activities leading to establishment or enhancement of international health Internet nodes and networks to provide means for conducting research and distributing and sharing biomedical information in the form of high quality World Wide Web services and value-added communications capabilities;
- Active participation in the Multilateral Initiative on Malaria to enhance the capabilities of African scientists to engage in malaria research and control efforts by improving communications capabilities, promoting information management skills, and networking and resource sharing among regional libraries;
- Evaluation and reconfiguration of the International MEDLARS Centers program, including the formation of an advisory group, to support the development of new collaborative working relationships in the medical and technological domains addressed in this report;
- New training and educational opportunities for foreign and U.S. students;
- Enhanced computer, communications, and basic library services necessary to support NLM's expanding international programs.

It is estimated that an additional \$20 million annually will be needed to initiate these new international collaborations and programs.

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